

WHAT IS CLAIMED IS:

1. A transmission photodetector comprising a first transparent electrode, a second transparent electrode, at least one of the first and second transparent electrodes being divided into a plurality of electrode cells, and a photoelectric transfer part sandwiched between the first and second transparent electrodes, the photoelectric transfer part being common to the plurality of electrode cells.

2. The transmission photodetector according to claim 1, wherein the photoelectric transfer part comprises: a transparent semiconductor layer stacked on the first transparent electrode; a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength; and a carrier transporting layer sandwiched between the sensitizing dye film and the second transparent electrode.

3. The transmission photodetector according to claim 1, wherein the photoelectric transfer part comprises: a transparent semiconductor layer stacked on the first transparent electrode; a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength; and a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode.

4. The transmission photodetector according to claim 1, wherein the photoelectric transfer part comprises an organic p-type semiconductor layer stacked on the first transparent electrode, and an organic n-type semiconductor layer stacked on the organic p-type semiconductor layer, wherein the second transparent electrode is stacked on the organic n-type semiconductor layer.

5. A transmission photodetector comprising:
a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength;

a second transparent electrode; and

a carrier transporting layer sandwiched between the sensitizing dye film and the second transparent electrode; wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells.

6. A transmission photodetector comprising:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength;

a second transparent electrode; and

a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode;

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells.

7. A transmission photodetector comprising:

a first transparent electrode;

an organic p-type semiconductor layer stacked on the first transparent electrode;

an organic n-type semiconductor layer stacked on the organic p-type semiconductor layer; and

a second transparent electrode stacked on the organic n-type semiconductor layer;

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells.

8. A stacked type photodetector comprising:

a first transmission photodetector configured to carry out

a photoelectric transfer with respect to light in a first wavelength band including a predetermined wavelength; and

a second photodetector, stacked on the first transmission photodetector, configured to detect light passing through the first transmission photodetector.

9. The stacked type photodetector according to claim 8, wherein the first transmission photodetector comprises:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film stacked on the transparent semiconductor layer;

a second transparent electrode; and

a carrier transporting layer sandwiched between the sensitizing dye film and the second transparent electrode.

10. The stacked tpe photodetector according to claim 8, wherein the first transmission photodetector comprises:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film stacked on the transparent semiconductor layer;

a second transparent electrode; and

a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode.

11. The stacked type photodetector according to claim 8, wherein the first transmission photodetector comprises:

a first transmission electrode;

an organic p-type semiconductor layer stacked on the first transparent electrode;

an organic n-type semiconductor layer stacked on the organic p-type semiconductor layer; and

a second transparent electrode stacked on the organic n-type semiconductor layer.

12. The stacked type photodetector according to claim 8, wherein the second photodetector has a transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the transparent electrode of the second photodetector is divided into a plurality of electrode cells.

13. The stacked type photodetector according to claim 9, wherein the second photodetector has a transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the transparent electrode of the second photodetector is divided into a plurality of electrode cells.

14. The stacked type photodetector according to claim 10, wherein the second photodetector has a transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the transparent electrode of the second photodetector is divided into a plurality of electrode cells.

15. The stacked type photodetector according to claim 11, wherein the second photodetector has a transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the transparent electrode of the second photodetector is divided into a plurality of electrode cells.

16. The stacked type photodetector according to claim 8, further comprising a transparent substrate including two principal planes faced each other, wherein the first transmission photodetector comprises a first and a second transparent electrodes, the second transparent electrode being stacked on one principal plane of the transparent substrate, the second photodetector has a third transparent electrode stacked on the other principal plane of the transparent substrate.

17. The stacked type photodetector according to claim 16, wherein each of the second and third transparent electrodes is divided into a plurality of electrode cells, the plurality of electrode cells of the second transparent electrode being the same dividing pattern as those of the third transparent electrode.

18. The stacked type photodetector according to claim 12, wherein the plurality of electrode cells have substantially equal areas symmetrically with respect to a point on the optical axis of incident light.

19. The stacked type photodetector according to claim 17, wherein the plurality of electrode cells have substantially equal areas symmetrically with respect to a point on the optical axis of incident light.

20. The stacked type photodetector according to claim 16, wherein the second photodetector has a fourth transparent electrode provided so as to face the third transparent electrode, and

each of the first and fourth transparent electrodes has a constant potential during operation.

21. The stacked type photodetector according to claim 16, further comprising a signal processor, integrally provided with the photodetector, configured to process an electric signal every one of the divided electrode cells, the electric signal being obtained via each of the second and third transparent electrodes.

22. The stacked type photodetector according to claim 8, wherein a second wavelength band photoelectric-transferred by the second photodetector includes a longer wavelength component than that of the first wavelength band photoelectric-transferred by the first transmission photodetector.

23. The stacked type photodetector according to claim 9,

wherein a second wavelength band photoelectric-transferred by the second photodetector includes a longer wavelength component than that of the first wavelength band photoelectric-transferred by the first transmission photodetector.

24. The stacked type photodetector according to claim 10, wherein a second wavelength band photoelectric-transferred by the second photodetector includes a longer wavelength component than that of the first wavelength band photoelectric-transferred by the first transmission photodetector.

25. The stacked type photodetector according to claim 11, wherein a second wavelength band photoelectric-transferred by the second photodetector includes a longer wavelength component than that of the first wavelength band photoelectric-transferred by the first transmission photodetector.